# DEPARTMENT OF THE AIR FORCE HEADQUARTERS AIR FORCE CIVIL ENGINEER SUPPORT AGENCY



MAY 11 2000

FROM: HQ AFCESA/CES 139 Barnes Drive Tyndall AFB, FL 32403-5319

SUBJECT: Engineering Technical Letter (ETL) 00-6: Air Force Carpet Standard

**1. Purpose.** This ETL provides technical and aesthetic selection criteria for acquisition, installation, maintenance, and eventual disposal of broadloom carpet, carpet tiles, and carpet pad. It supersedes ETL 94-3, 10 June 1994

**Note:** This ETL is substantially revised and should be completely reviewed.

**2. Application:** Approved areas of all Air Force facilities, regardless of fund source.

## **2.1.** Authority:

- AFPD 32-10, Installations and Facilities.
- AFI 32-1023, Design and Construction Standards and Execution of Facility Construction Projects.
- AFI 32-7080, Compliance Assurance and Pollution Prevention.
- MIL-HDBK 1191, Medical Military Construction Program Facilities Design and Construction Criteria.

**Note:** Air Force Departmental civil engineering publications may be accessed electronically at: <a href="http://afpubs.hq.af.mil/pubs/publist.asp?puborg=AF&series=32">http://afpubs.hq.af.mil/pubs/publist.asp?puborg=AF&series=32</a>.

**2.2.** Effective Date: Immediately.

#### **2.3.** Ultimate Recipients:

- Installation Civil Engineer (CE) personnel
- Project managers (PM)
- Interior designers
- Facility managers
- Design consultants
- Design agents

#### 3. References.

#### 3.1. Public Law:

 Code of Federal Regulations (CFR) Part 1630, Standard for the Surface Flammability of Carpets and Rugs (FF 1-70) (reference <a href="http://www.access.gpo.gov/nara/cfr/waisidx\_99/16cfr1630\_99.html">http://www.access.gpo.gov/nara/cfr/waisidx\_99/16cfr1630\_99.html</a>.  Public Law 101-336, Americans with Disabilities Act (reference http://www.usdoj.gov/crt/ada/pubs/ada.txt.

#### 3.2. DoD.

# 3.2.1. Headquarters Air Force Center for Environmental Excellence (HQ AFCEE):

- Carpet Selection Handbook (reference <a href="http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.htm">http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.htm</a>)
- Military Family Housing Guide (reference http://www.afcee.brooks.af.mil/dc/dch/mfhguide.chap4.htm).

# 3.2.2. U.S. Army Corps of Engineers (USACE):

 MIL-HDBK 1191, Medical Military Construction Program Facilities Design and Construction Criteria (reference <a href="http://www.ccb.org/pdf/06/08/012/1191.PDF">http://www.ccb.org/pdf/06/08/012/1191.PDF</a>, by subscription; free to DoD activities and contractors).

## 3.3. Private Industry.

- **3.3.1.** American Society for Testing and Materials (ASTM):
  - D418, Standard Test Methods for Testing Pile Yarn Floor Covering Construction
  - D1335, Standard Method of Test for Tuft Bind of Pile Floor Coverings
  - E648, Standard Test Methods for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

Order from: http://www.document-center.com/home.cfm/sid=20478080/

- **3.3.2.** American Association of Textile Chemists and Colorists (AATCC):
  - Test Method (TM) 16-1993, Colorfastness to Light
  - TM 134-1996, Electrostatic Propensity of Carpets

Order from: <a href="http://www.aatcc.org/">http://www.aatcc.org/</a>

- **3.3.3.** Carpet and Rug Institute (CRI):
  - 104, Standard for Installation of Commercial Carpet
  - 105, Standard for Installation of Residential Carpet

Order from: The Carpet and Rug Institute P.O. Box 2048, Dalton GA 30722-2048 Fax 706-278-8835 (706)278-0232 or 1-800-882-8846 **4. Technical Assistance.** Reference the Air Force *Carpet Selection Handbook* at: <a href="http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.htm">http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.htm</a>.

#### 5. Waivers.

- **5.1.** Medical Facilities. Request waivers through the Regional Health Facilities Office (RHFO) to the Health Facility Division (HQ AFMSA/SGSF).
- **5.2.** Other Facilities. Contact the installation or MAJCOM interior designer (reference <a href="http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.htm">http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.htm</a> for points of contact).

**Note:** Replacing carpet in General Officer Quarters (GOQs) more often than every seven years requires approval in advance from the MAJCOM/CC in accordance with established policy.

## 6. Authorized Areas.

- **6.1.** Medical Facilities: Reference MIL-HDBK 1191, Appendix A.
- **6.2.** Military Family Housing (MFH): All living areas except kitchens, baths, and patios/porches exposed to weather elements. Use hard surface floor coverings instead of carpet wherever possible, particularly in entry areas. See paragraph 4.9.1 of the *Military Family Housing Guide* (<a href="http://www.afcee.brooks.af.mil/dc/dch/mfhguide.chap4.htm">http://www.afcee.brooks.af.mil/dc/dch/mfhguide.chap4.htm</a>).
- **6.3.** Other Facilities: Most areas, with these exceptions: service, maintenance and industrial areas, food preparation areas, toilets and bathrooms, and areas requiring frequent cleaning. Do not use carpet in heavily trafficked areas (such as malls), or areas prone to flooding.

#### 7. Fund Source.

- **7.1.** Appropriated Funds. Carpet purchased with appropriated funds and furnished as Government Furnished Material (GFM) may be acquired through a General Services Administration (GSA) contract or from open market sources. Open market source acquisition must be in accordance with the Federal Acquisition Regulation (FAR). If the carpet is acquired by a construction contractor and furnished as Contractor Furnished Material (CFM), it may be purchased from open market sources.
- **7.2.** Non-appropriated Funds (NAF). Carpet provided from NAF resources may be purchased from an Air Force Non-Appropriated Funds (AFNAF) contract, GSA contract, or open market sources.

**7.3.** Military Family Housing (MFH) Funds. Housing funds pay for all new construction carpet purchases. Base Operations and Maintenance (O&M) funds pay for all replacement carpet.

### 8. Selection Criteria.

- **8.1.** Primary Considerations.
- **8.1.1.** All carpet must comply with applicable health and safety codes, Americans with Disabilities Act Accessibility Guidelines (ADAAG), <a href="http://www.usdoj.gov/crt/ada/adahom1.htm">http://www.usdoj.gov/crt/ada/adahom1.htm</a>, and Uniform Federal Accessibility Standards (UFAS) at <a href="http://www.access-board.gov/bfdg/bfdg.htm">http://www.access-board.gov/bfdg/bfdg.htm</a>.
- **8.1.2.** Federal agencies are required by law, Executive Orders (EO), the Federal Acquisition Regulations (FAR), Defense Federal Acquisition Regulations (DFAR), and Air Force policy, to consider environmentally preferable products. This includes items that are reused and certain Environmental Protection Agency (EPA) designated carpet products manufactured with recycled or recovered materials. Reference the latest information on recycled carpet products at <a href="http://www.epa.gov/cpg">http://www.epa.gov/cpg</a>.
- **8.1.3.** Review and revise carpet specifications to allow the use of recovered materials when the materials meet technical and aesthetic requirements. Compliance with EPA guidelines for recycled product specifications (AFI 32-7080, *Compliance Assurance and Pollution Prevention*) is mandatory unless) the recycled-content product:
  - is unreasonably priced (costs more than comparable non-recycled products)
  - does not meet technical requirements
  - is not available competitively (from two or more vendors)
  - is not available in a reasonable amount of time

Consider carpet reuse or regeneration programs that are now being introduced by some manufacturers.

- **8.2.** Recommended Warranty (Minimum):
  - Ten-year warranty against 10% loss of face fiber
  - Ten-year warranty against edge raveling, snags, picks, runs, and delamination
- **8.3.** Authorized/Recommended Floor Coverings.
- **8.3.1.** Use only carpet tiles in open office areas with furniture systems and areas with raised flooring or flat cable electrical systems. (Equipment is available which allows carpet tile replacement without disassembling system furniture.)
- **8.3.2.** Carpets featuring antimicrobial effectiveness and electrostatic propensity guaranteed for the life of the carpet are recommended for use in medical facilities and Child Development Centers.

- **8.3.3.** Carpet fibers must be solution-dyed for medical facilities and Child Development Centers. Solution-dyed carpet is also recommended for lodging facilities and Youth Centers.
- **8.3.4.** Carpet in Child Development Centers and Youth Centers must have a soft, non-abrasive surface texture. Suggest using cut pile or cut loop type carpet.
- **8.3.5.** Recommend using carpet tile, or its associated six-foot- (1.83-meter-) wide rolled goods for installation in corridors.
- **8.3.6.** Use broadloom carpet or carpet tile that contains pattern or bold, multi-colored tweed, except as noted in paragraph 8.3.6.2. The pattern must cover a majority of the carpet surface. Avoid patterns with definite lines or a design that repeats in a distinctively linear pattern (vertical or horizontal) in corridors, small rooms, or areas with angled walls. These designs are difficult to install parallel to walls. A bold tweed must contain a minimum of two distinctly different colors; e.g., gray and burgundy.

**Note:** Order an additional 10 percent of replacement tiles and roll goods to allow for cutting and matching of carpet pattern repeats.

- **8.3.6.1.** Solid colors are approved for General Officers or Wing/Base Commander's suites, chapels, and Distinguished Visitors Quarters in Lodging, and borders.
- **8.3.6.2.** Use solid colors or muted tone-on-tone tweeds in Military Family Housing. Avoid white and extremely pale tints. Light or medium value neutral colors such as beige, taupe, or gray are authorized.
- **8.3.7.** Specify durable products that extend the length of replacement cycles to minimize life-cycle cost and reduce waste.
- **8.4.** Technical Specifications.
- **8.4.1.** Construction. Broadloom carpet and carpet tile will be tufted, woven, or fusion-bonded.

#### **8.4.2.** Fibers:

- Continuous filament nylon 6,6 or nylon 6
- Wool and wool/nylon blends (except in medical facilities, Child Development Centers and Youth Centers)
- Polyethylene terephthalate (PET)
- Other recovered/recycled materials
- **8.4.3.** Pile Height: Reference ADAAG, Section 4.5, *Ground and Floor Surface* for detailed requirements.

- **8.4.3.1.** Medical Facilities. Pile height minimum is 0.125 inches (3.175 millimeters); maximum is 0.250 inches (6.35 millimeters). Maximum loop height variation within one carpet is 0.030 inches (0.762 millimeters).
- **8.4.3.2.** Family Housing. There is no restriction on pile height in family housing except within units designated accessible.
- **8.4.4.** Pile Weight Density (Minimum). See Table A1 for minimum weight and density by facility type. The method for calculating density is:

36 x pile weight (oz/sq yd) pile height (inches)

or

27 x pile weight (g/m<sup>2</sup>) pile height (mm)

- **8.4.5.** Gauge (Minimum): 1/8-inch (3.175-millimeter) as tested by ASTM-D418, Standard Test Methods for Testing Pile Yarn Floor Covering Construction.
- **8.4.6.** Tuft Bind (Minimum):
  - 20 pounds-force (89 newtons) for broadloom
  - 15 pounds-force average (66.7 newtons) for carpet tile, as tested by ASTM-D1335, Standard Method of Test for Tuft Bind of Pile Floor Coverings
- **8.4.7.** Backings.
- **8.4.7.1.** Both primary and secondary backings must be a synthetic material. Jute back is not authorized.
- **8.4.7.2.** Use of attached cushion back is optional. Open cell polyurethane cushion back material is preferred over closed-cell vinyl.
- **8.4.7.3.** Carpet systems (carpet and pad) must include a non-textured slab rubber pad with 22 pounds (9.98 kilograms) minimum density. Recycled pad must meet this criterion. In medical facilities, carpet systems are authorized only in the command suite, administrative areas, pharmacy, and record departments.
- **8.4.8.** Testing.
- **8.4.8.1.** Colorfastness. Colorfastness to light (fading) will comply with American Association of Textile Chemists and Colorists (AATCC) Test Method (TM) 16-1993, Colorfastness to Light, and will have a minimum of 4 gray scale rating after 40 hours.

- **8.4.8.2.** Electrostatic Propensity (Maximum):
  - 3.5 kV or less for general commercial areas
  - 2.0 kV or less for critical environments (such as equipment/technical rooms of communication facilities) as tested by the AATCC TM 134-1996, *Electrostatic Propensity of Carpets.*

#### **8.4.8.3.** Fire Resistance.

- **8.4.8.3.1.** Carpet for all areas except corridors shall conform CFR Part 1630, Standard for the Surface Flammability of Carpets and Rugs (FF 1-70) (Pill Test).
- **8.4.8.3.2.** Carpet and carpet systems (carpet and pad) for corridors must meet ASTM-E648, *Standard Test Methods for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source*, and the following criteria:
  - Minimum average critical radiant flux of 0.45 watts per square centimeter or greater in unaccompanied personnel housing, lodging facilities, and hospitals
  - Minimum average critical radiant flux of 0.45 (Class I) watts per square centimeter, or greater in all other facilities

#### 9. Installation.

**9.1.** Contractor Qualifications. All work is to be performed by contractors/installers who are CFI Certified Floorcovering Installers (International Certified Floorcovering Installer Association), or manufacturer's approved installers. Foremen on the job-site must be "Certified C-II Minimum."

#### 9.2. Methods.

- **9.2.1.** For warranties to be valid, install all carpet in accordance with the installation guidelines set forth by the manufacturer and/or the minimum guidelines set forth in the CRI 104, Standard for Installation of Commercial Carpet, and CRI 105, Standard for Installation of Residential Carpet.
- **9.2.2.** Reference the Air Force *Carpet Selection Handbook* for descriptions of the various methods of installing broadloom carpet and carpet tile.
- **9.2.3.** Consider alternative carpet installation systems that use dry adhesives or mechanical bonding to eliminate emissions of odor and Volatile Organic Compounds (VOC), or use low-emitting wet adhesives without a solvent base.
- **9.2.4.** In family housing, install carpeting over pad; direct "glue-down" is not allowed.

- **9.2.5.** Provide transition strips or protective edges where carpet meets other flooring materials.
- **9.2.6.** Provide a soil walk-off area or mat for carpet in entry areas.
- **9.3.** Environmental Conditions. Proper environmental conditions must be maintained before, during and after installation. Provide adequate ventilation during installation, and 48 to 72 hours thereafter to dissipate new carpet odors.
- **9.4.** Recordkeeping. The BCE will keep the following information for each carpet installation:
  - Location (address, building number, and room)
  - Name of carpet manufacturer, pattern, and color
  - Carpet certification/record that the carpet conforms to the Air Force Carpet Standards (most recent ETL)
  - Date of installation
  - Method of installation and substrate
  - Disposal certification

# 10. Maintenance.

- **10.1.** Carpet should be cleaned and maintained according to manufacturer's recommendations. Both preventive and corrective maintenance must be performed to retain original appearance and antimicrobial characteristics. See Chapter 3 of the Air Force *Carpet Selection Handbook*.
- **10.2.** Identify and remove stains and spillage immediately.
- **10.3.** Establish a maintenance program for periodic vacuuming and professional cleaning.
- **10.3.1.** Regular vacuuming will remove light soils that can damage carpet fibers.
- **10.3.2.** Obtain carpet manufacturer's guidelines for frequency of professional cleaning. Hot water extraction methods, using only hot water, are recommended for most carpets. Do not use detergents, shampoo, or liquid cleaning chemicals. Do not saturate carpet.
- **10.3.3.** Do not mix dry cleaning chemicals with hot water cleaning materials.
- **10.3.4.** Remove furniture before cleaning, or place plastic or aluminum foil under and around furniture to prevent rust and stains from forming on the carpet. Leave plastic or foil in place until carpet is completely dry.

## 11. Removal and Disposal.

- **11.1.** In accordance with EPA guidelines to reduce landfilling, provide for carpet and carpet installation waste handling in the overall waste management plan of a project. When feasible, all disposal of carpet and carpet installation waste should require a certification that the products were not deposited in a landfill. There are carpet reclamation centers in most major cities. Costs for using these centers compare favorably with landfill costs.
- **11.2.** Carpet containing hazardous substances must be disposed of in accordance with hazardous waste regulations.
- **12. Point of Contact:** Ms. Sandy Warner, IIDA, HQ AFCEE/DCD, DSN 240-4201, commercial (210) 536-4201, FAX 240-9004, or e-mail sandy.warner@hgafcee.brooks.af.mil.

Michael C. Cook, Colonel, USAF Technical Director

#### 4 Atch

- 1. Table A1. Minimum Pile Weight to Density Ratio (Inch-Pound Units)
- Table A2. Minimum Pile Weight to Density Ratio (Standard International Units)
- 3. Table A3. Areas of Use and Wear Classification
- 4. Distribution List

Table A1. Minimum Pile Weight to Density Ratio (Inch-Pound Units)

Yarn Weights and Density	Nylon Fibers		Polypropylene Filament		Wool and Wool/Nylon		Polyester (PET)		
Surface Texture	oz/yd <sup>2</sup>	Density	oz/yd <sup>2</sup>	Density	oz/yd <sup>2</sup>	Density	oz/yd <sup>2</sup>	Density	
Tufted Carpet/Carpet Tile: Wear Level — Heavy									
a. Loop Pile	24	4500	28	6000	42	6000	NR		
b. Loop Tile	24	4500	NR		NR		NR		
c. Cut Pile Tile	26	5000	NR		NR		NR		
d. Cut Pile	32	4500	NR		46	4300	NR		
e. Frieze	32	4500	NR		50	4000	NR		
f. Cut and Loop	26	4500	NR		50	4800	NR		
Tufted Carpet/Carpet Tile: Wear Level — Severe (Extra Heavy)									
a. Loop Pile	32	6000	32	8000	NR		NR		
b. Loop Tile	24	6000	NR		NR		NR		
c. Cut Pile	36	6000	NR		NR		NR		
d. Frieze	36	6000	NR		NR		NR		
e. Cut and Loop	30	6000	NR		NR		NR		
Woven or Bonded Carpet/Carpet Tile: Wear Level — Heavy									
a. Loop Pile	24	4500	28	6000	42	6000	NR		
b. Cut Pile	30	4500	NR		46	4300	NR		
c. Cut Pile Tile	26	5000	NR		NR		NR		
d. Cut Tile	26	4200	NR		NR		NR		
e. Frieze	30	4500	NR		50	4000	NR		
f. Cut and Loop	26	4500	NR		50	4800	NR		
Woven or Bonde	ed Carpe	et/Carpet	Tile: W	ear Leve	I — Seve	ere (Extra	Heavy)		
a. Loop Pile	30	5500	NR		NR	,	NR		
b. Cut Pile	36	5500	NR		NR		NR		
c. Cut Pile Tile	28	4400	NR		NR		NR		
d. Frieze	36	5000	NR		NR		NR		
e. Cut and Loop	30	5500	NR		NR		NR		
Tufted Carpet/Carpet Tile: Wear Level — Light/Moderate									
a. Loop Pile	24	3200	NR		NR		NR		
b. Loop Tile	NR		NR		NR		NR		
c. Cut Pile	32	3200	NR		NR		45	5200	
d. Frieze	32	3200	NR		NR		45	5200	
e. Cut and Loop	24	3200	NR		NR		NR		

NR - Not Recommended or not available

Density = 36 x Pile Weight (ounces per square yard)
Pile Height (inches)

Note: See Table A2 for wear classification by facility type and area.

Table A2. Minimum Pile Weight to Density Ratio (Standard International Units)

Yarn Weights and Density	Nylon Fibers		Polypropylene Filament		Wool and Wool/Nylon		Polyester (PET)		
Surface Texture	g/m²	Density	g/m²	Density	g/m²	Density	g/m²	Density	
Tufted Carpet/Carpet Tile: Wear Level — Heavy									
a. Loop Pile	814	4500	950	6000	1424	6000	NR		
b. Loop Tile	814	4500	NR		NR		NR		
c. Cut Pile Tile	882	5000	NR		NR		NR		
d. Cut Pile	1085	4500	NR		1560	4300	NR		
e. Frieze	1085	4500	NR		1696	4000	NR		
f. Cut and Loop	882	4500	NR		1696	4800	NR		
Tufted Carpet/Carpet Tile: Wear Level — Severe (Extra Heavy)									
a. Loop Pile	1085	6000	1085	8000	NR		NR		
b. Loop Tile	814	6000	NR		NR		NR		
c. Cut Pile	1221	6000	NR		NR		NR		
d. Frieze	1221	6000	NR		NR		NR		
e. Cut and Loop	1017	6000	NR		NR		NR		
Woven or Bonde	ed Carpe	et/Carpet	Tile: W	ear Leve	I — Heav	y			
a. Loop Pile	1017	4500	950	6000	1424	6000	NR		
b. Cut Pile	1017	4500	NR		1560	4300	NR		
c. Cut Pile Tile	882	4200	NR		NR		NR		
d. Frieze	1017	4500	NR		1696	4000	NR		
e. Cut and Loop	882	4500	NR		1696	4800	NR		
Woven or Bonded Carpet/Carpet Tile: Wear Level — Severe (Extra Heavy)									
a. Loop Pile	1017	5500	NR		NR		NR		
b. Cut Pile	1221	5500	NR		NR		NR		
c. Cut Pile Tile	950	4400	NR		NR		NR		
d. Frieze	1221	5000	NR		NR		NR		
e. Cut and Loop	1017	5500	NR		NR		NR		
Tufted Carpet/Carpet Tile: Wear Level — Light/Moderate									
a. Loop Pile	814	3200	NR		NR		NR		
b. Loop Tile	NR		NR		NR		NR		
c. Cut Pile	1085	3200	NR		NR		1696	5200	
d. Frieze	1085	3200	NR		NR		1696	5200	
e. Cut and Loop	814	3200	NR		NR		NR		

NR - Not Recommended or not available

Density =  $\frac{27 \text{ x Pile Weight (g/m}^2)}{\text{Pile Height (mm)}}$ 

**Note:** See Table 2 for wear classification by facility type and area.

Table A3. Areas of Use and Wear Classification

	Minimum Carpet Wear Classifications		
<u>Facility</u>	<u>Heavy</u>	<u>Severe</u>	Light/ <u>Moderate</u>
Administrative Facilities			
(including administrative areas in other facility types) Open Plan Offices		х	
Closed Private Offices	Χ	<b>X</b>	
Corridors	V	X	
Conference Rooms	X		
Bowling Centers Concourse			
(excluding food service working and storage areas)	X	X	
Chapels and Other Religious Facilities			
Worship Areas Education Areas	X X		
Child Development Centers	X		
Clubs — Officer and Enlisted	X	х	
Dining Facilities			
(excluding work spaces, serving areas, and toilets	s)	X	
Exchange Facilities			
Sales Areas Offices (see Administrative Facilities)	X	Х	
Restaurant and Cafeteria Dining Areas	<b>A</b>	X	
Firehouses			
Sleeping Rooms	X X		
Day Rooms Offices (see Administrative Facilities)	X		
Fitness Centers			
Common Areas	v	X	
Offices (see Administrative Facilities)	X		
Golf Course Clubhouse (Spike Proof) Pro Shop		Х	
Dining Area		X	
Libraries	X		
Lodging Facilities			
(includes VAQ, VOQ, and TLF) Rooms/Suites (except kitchens and baths)	Х		
Corridors (except vending and laundry areas)	^	X	
Billeting Lobby		X	
Military Family Housing			X
Music and/or Drama Centers	X		
Passenger Terminals Waiting Areas		X	
Offices (see Administrative Facilities)	X		

Table A2. Areas of Use and Wear Classification (Continued)

	Minimum Carpet Wear Classifications				
<u>Facility</u>	<u>Heavy</u>	Severe	Light/ <u>Moderate</u>		
Research Facilities Bio-Optics Laboratories	X				
Theaters, Auditoriums	X	X			
Training Buildings and Educational Facilities Including Dependent Schools Staff Offices (see Administrative Offices) Classrooms Corridors	X X	X X			
Medical Facilities		X			
Unaccompanied Personnel Housing Sleeping Rooms Public Areas (corridors, lobbies, lounges, TV rooms) Offices (see Administrative Facilities)	x x	x			
Youth Centers	X	X			

<sup>\*</sup>Use lower wear classification only where applicable based on expected wear.

## **DISTRIBUTION LIST**

(1)

(1)

## **DEPARTMENT OF DEFENSE**

Defense Commissary Service Director of Facilities Bldg 8400 Lackland AFB TX 78236-5000

(1) Defense Technical Information
Center (1)
ATTN: DTIC-FDA
Alexandria VA 22034-6145

AAFES/ATTN: CFE PO Box 660320 Dallas TX 75266-0320

## SPECIAL INTEREST ORGANIZATIONS

IHS (S. Carter) 15 Inverness Way East Stop A-111 Englewood CO 80112 Construction Criteria Database (1)
National Institute of Bldg Sciences
1201 L Street NW, Suite 400
Washington DC 20005